

# IST362 Network Protocols

## Fall 2005 Course Syllabus

**Instructor:** Dr. Kairui Chen; Email: [chenk@marshall.edu](mailto:chenk@marshall.edu); Office: Prichard Hall 201

**Office Hours:** MW: 1:00-4:00p.m., T, R: 12:30 – 2:30p.m., F: 1:00 - 3:00p.m. , and by appointment

**Course website:** <http://www.science.marshall.edu/chenk/ist362>

**Textbooks:** *Computer Networking: A Top-Down Approach Featuring the Internet*, by James F. Kurose; Keith W. Ross; ISBN: 0-321-22735-2, 3rd edition.

**Computer Requirements:** Supplemental materials can be found at the course website. I will be sending class announcements, updates, etc. using the website. Access to the internet is required.

**Course Description:** Modern network protocols, technologies, and concepts are discussed. Internet protocols, architecture, and network layers are emphasized.

**Credit:** The course is three (3) credit hours. It includes classroom lectures, quizzes, homework assignments, and exams.

**Prerequisite:** IST238 – Algorithms

### Desired Objectives/Outcomes:

- Demonstrate an understanding of networking terminology and concepts
- Discuss computer network topologies
- Demonstrate an understanding network protocols such as HTTP, FTP, SMTP, TCP, UDP
- Demonstrate ability to understand the background of network applications

### Instruction Method:

There will be approximately 3 contact hours of classroom lecture per week.

### Evaluation method:

Evaluation of student's performance will be based on the quality of your performance on all assignments, exams, and class and web-based participation.

### Grading Policy:

Final grades are based on performance in assignments, quizzes, exams, and labs as indicated below.

Midterm Exam (in-class)	25%
Final Exam	30%
Quizzes	20%
Homework Assignments	20%
Projects (optional)	10%
Attendances	5%

Final letter grades are determined based on the following grading scale:

90-100%	A
80-89%	B
70-79%	C
60-69%	D
Below 60	F

The instructor reserves the right to change these values depending on the overall class performance and/or extenuating circumstances.

### Policy Statement:

**Exams:** There will be one 50 minute midterm exam in October which will cover all the materials discussed from the beginning of the course, up to one week before the exam. There will also be a comprehensive final exam for the course that covers all the materials covered in class. Exact dates and times of exams will be announced in class.

**Make-up Exams and Late Penalty:** Make-up exams will not be given except under unusual circumstances and satisfactory written justification. Any student who misses an exam due to an unexcused absence will receive a grade of zero for that exam with no opportunity for make-up or substitution. University excused absences or those occurring with a good reason will be excused. If you miss the midterm exam and are granted a make-up chance, the final exam will serve as the make-up exam.

**Quizzes:** There will be at least one quiz each week. Students will be notified of a coming quiz in advance, usually at the end of a previous lecture. Each quiz will be held at the beginning of a class. Quizzes cover the materials discussed in the previous lecture and from your reading assignments. A grade of zero will be assigned for any missed quizzes. There will be no make-up chances for missed quizzes.

**Homework Assignments:** There will be at least one homework assignment from each chapter covered. All homework assignments are due by the beginning of the class on the due day. Late assignments will be penalized at the rate of 10% per day (including weekends).

**Projects (optional):** Projects that help you to understand the materials covered in class better or cover extra materials may be assigned to depending on class performance. They require extra time and effort, but may help you to make up the grade.

**Attendance Statement:**

Students are expected to attend class daily. Students who do not attend classes regularly do not usually pass the course. Attendance does count for 5% of your final grade.

**Passing Grade:** Assignments, quizzes, attendances, and exams are required parts of the course and must be satisfactorily completed to pass this course. A student must have a passing performance on each part. A failing grade on a component may result in a failing grade in the course.

**Withdrawal Policy:**

The University withdrawal policy is followed in this course. The last day to drop an individual course is October 28, 2005.

**University Holidays:**

The class is officially dismissed on the following dates:

Labor Day: September 5, 2005

Fall Break: November 21, 2005

November 23, 2005

November 25, 2005

**Topics and Methodology:**

1. Introduction: Internet and Networks; Circuit switching and modulation; Packet switching networks; Theoretical/experimental performance; Protocol layers
2. Application Layer: http; ftp; smtp; dns; POP3 etc.
3. Transport Layer: Udp; tcp; Congestion control
4. Network Layer and Routing Algorithms: Link-state and distance-vector algorithms; ip protocol; rip; osp; bgp; Multicast routing; Mobile ip
7. Queues, QoS, and multimedia
8. Network Security

For each topic discussed in the textbook, specific experience of other students and the instructor may be discussed to enhance the characteristics involved. Additional material may also be covered in the class depending on the progress of the class. Every student is responsible for all materials presented in class, including lectures, notes, and handouts. Class attendance is very important for you to succeed in this class.